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Guernsey, Nathaniel Taylor

Valuation

[New York?]

[1916]

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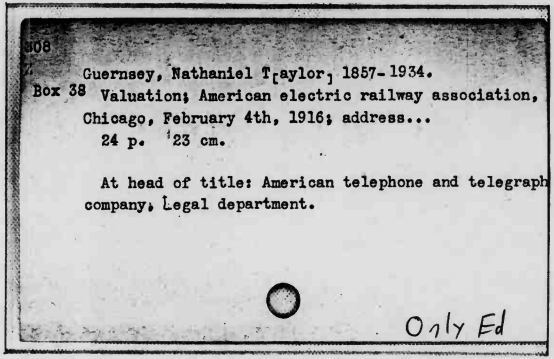
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AMERICAN TELEPHONE AND
TELEGRAPH COMPANY

LEGAL DEPARTMENT

VALUATION

AMERICAN ELECTRIC RAILWAY ASSOCIATION

Chicago, February 4th, 1916

Address by

Mr. NATHANIEL T. GUERNSEY

General Counsel, American Telephone
and Telegraph Company

VALUATION.

The regulation of public utilities by state commissions has made the accurate valuation of these utilities a concrete question of the utmost importance. The amount invested in street and electric railways alone is estimated at four billion, five hundred ninety-seven million dollars. A variation of ten per cent. upon this aggregate would nearly equal the recent enormous Anglo-French loan of five hundred million dollars.

In the time which I have at my disposal, I propose to consider three questions, namely:

1. What is value?
2. How is value to be ascertained?
3. When value has been ascertained, what use should be made of it?

What is Value?

Valuation is defined as the act of valuing. Therefore, for a clear comprehension of what is under discussion, it is necessary to determine what value is. Nothing creates more confusion or misunderstanding than a lack of clear analysis, and of the clear definitions which should result from it. To ascertain what the word "value" means, we must do what we should do with any other word under any other circumstances, that is, go to the dictionaries. It is defined in the Century Dictionary as follows:

> Value: 1. "Worth; the property or properties of a thing in virtue of which it is useful or estimable, or the degree in which such a character is possessed; utility; importance; excellence; applied to both persons and things."

2. "Estimated or attributed worth; appreciation; valuation; esteem; regard."
3. "The importance of a commodity measured by the amount of other commodities (commonly represented by money) for which it can be exchanged in open market; the ratio in which one thing exchanges against others; the command which one commodity has over others in traffic; in a restricted (and the popular) sense, the amount of money for which a thing can be sold; price. In political economy *value* is distinguished from *price*, which is worth estimated in money, while value is worth estimated in commodities in general."
4. "Price equal to the intrinsic worth of a thing; real equivalent."

Neither the public nor the public utilities may depart from the established meaning of this word. To state this in another way, the law makes the value of a utility an important factor in certain aspects of regulation. To obviate what have at the time seemed to be consequences which would be inequitable, efforts have been made by indirection to change the law by ascribing to the word value a meaning that is arbitrary in the sense that it does not accord with the established definitions. To illustrate, in connection with the valuation of the railroads of the country now pending before the Interstate Commerce Commission in Washington, it was contended in a brief filed in behalf of the state commissions that value as applied to railroads should be construed to mean the cost originally incurred in their construction. Eminent engineers have contended, among other things, that value should be determined by cost, or fixed by the cost of reproduction, with or without the deduction of depreciation, or that it should be something ascertained by capitalizing earnings. Each contention is an attempt by a forced

definition of the word value, to work out the result which the facts under consideration seem to demand as just; and so we have a cost value, a reproduction value, an investment value, a rate-making value, a taxable value, the adjective in every instance being in effect a confession that what is under consideration is not value, or fair present value, but something which the adjective distinguishes from it.

Value, when applied to the property of public utilities, means what it means when applied, under like conditions, to any other class of property. It is what the property is worth. It is, adopting the language of the dictionary, the "price equal to the intrinsic worth of the thing," its "real equivalent." Just as soon as it is conceded, for the purpose of working out an equitable result in one case, that value may be construed to mean something other than value, the door has been opened for construing value to mean something other than value in order to work out an inequitable result in any case. It will not serve the interests of either the utilities or the public (which, in the final analysis, are not antagonistic), to attempt to solve any of the questions that are presented by juggling with the meaning of words, or by giving them an arbitrary definition. Any inequalities in the law may be more surely and promptly corrected by facing them squarely than by seeking to evade them.

For the purposes of this discussion, the word "value" will be taken in its established sense as meaning the importance of the thing in question, measured by the amount of other commodities (commonly represented by money) for which it can be exchanged in open market, or the price equivalent to its intrinsic worth, which shall be a real equivalent.

How is Value to be Ascertained?

The value of any public utility at any particular time is a fact which must be deduced from the application of trained, intelligent, honest judgment to a great many other facts. The length of a car or a rail, the number of poles in a given piece of construction, the number of yards in a cut or fill, are all facts which may be ascertained definitely by the application of definite, established standards of measurement. The determination of any one of these facts involves only a simple process, and when it has been honestly determined there is room for no substantial differences as to its correctness. The value of a public utility is a fact of an entirely different character. There is nothing which can be applied to a public utility as a measure which will determine its value. The Supreme Court of the United States said in the *Minnesota Rate Cases* (230 U. S. 434), referring to the value of the railroads involved in that controversy:

> "The ascertainment of that value is not controlled by artificial rules. It is not a matter of formulas, but there must be a reasonable judgment having its basis in a proper consideration of all relevant facts."

This statement will commend itself to the laymen as well as to the courts as absolutely sound. Much of the expense and uncertainty and difficulty that attend the regulation of public utilities would be obviated if there were some formula or some measure which, applied to a public utility, would establish its value, and which, applied to the situation, would determine what is a fair return, with the same certainty that a steel tape will give us the length of a piece of track. The fact that such a formula would remove some of the greatest difficulties which inhere in regulation, and would therefore be of

enormous practical advantage, cannot justify a refusal to accept the fact that it does not exist. The best results will be attained in regulation, just as they are attained in everything else, by accepting the facts and working to them or from them, and not by attempting to ignore them or cover them up. There is no such formula—there is no such equation—just as there is no such formula or equation by which we may deduce the value of a piece of real estate, or of a picture, or of a horse, or of any other piece of property which is not so frequently sold and of such standard characteristics as to have a definite value fixed by current transactions.

There is an important collateral result which must ensue from the acceptance of the statement of the Supreme Court that value must result from the exercise of a reasonable judgment applied to a consideration of all of the relevant facts. Obviously, this judgment to be worth anything must not only be honest and intelligent, but it must be a trained judgment, based upon experience with reference to the particular class of property that is under consideration. No one would think of employing a dry goods man to value real estate, or a real estate man to value dry goods. Judgment to be worth anything must be sound; that is, it must be the result of a consideration of all the material facts and of such a co-ordination of these facts as will give to each one of them the influence to which it is entitled as a factor in the ultimate result. The knowledge which will enable one to distinguish the relevant from the irrelevant facts and to assign to each relevant fact its proper weight is something that cannot be attained without experience. The fact that value is the result of trained judgment should tend to restrict the field of, if not to entirely eliminate the class of so-called experts, who are not experts at all, but who are mere theorists, and who are dangerous because of their eagerness to apply to the property of others their theories,

honest, if you please, but absolutely unsupported by the results of practical experience, and therefore untrustworthy.

The fact that value is something to be determined by the application of reasonable judgment to all of the relevant facts, leads naturally to the inquiry, what are the relevant factors bearing upon the value of an electric railway or of any other public utility. As long ago as 1898, in the case of *Smyth* vs. *Ames* (169 U. S. 466-546) the Supreme Court of the United States called attention to the more important of these factors in the following language:—

> "And in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property."

This statement, which has been referred to with approval in practically every subsequent case involving a like question, specifies as important factors the original cost of the property, the cost of its reproduction, its capitalization, and its revenue. It clearly leaves the door open for the consideration of every other material factor.

It is probable that no person could enumerate all of the factors which should be taken into account, or which are in fact actually taken into account, in a proper determination of the value of any public utility, because it is improbable that any person of trained judgment, even

though exercising that judgment soundly along correct lines, would be able to specify every factor which consciously or unconsciously had affected his conclusion. Consistently with this fact, and probably because of this fact, the courts, while specifying certain factors as pertinent and entitled to consideration, have never attempted to specify all of the material factors and have been careful not to exclude from consideration anything which may actually affect the value of the property in question. The cases decided by the courts overwhelmingly negative the proposition that any single thing or any single factor can of itself be a measure of value, doing this sometimes by direct statement, but more often inferentially but not less certainly.

Just as there is no formula through the application of which value may be ascertained, there can be no formula which will determine the relative weight which the various factors affecting value should have in any particular case. The weight to which they are entitled is to be determined by the facts and circumstances of the particular inquiry. This is very aptly illustrated by evidence as to cost. Such evidence is competent under the authorities. This is settled beyond room for controversy. It is recognized as established doctrine in many laws providing for valuations, such as the statute under which the Interstate Commerce Commission is now acting. But the weight to which this evidence of cost is entitled, and it may vary from nothing to almost controlling importance, depends upon the circumstances of the case. Many valuers, who have never made the analysis of the situation which leads to the formulation of this rule, have recognized its soundness through their practical application of it in their own work. Original costs, where a long period of time has elapsed and where the conditions when the costs were incurred vary radically from the conditions which exist at the time of the valuation, can have but very little, if

any, appreciable weight in determining the question. Recent costs, incurred in the immediate past, where there has been no such variation of conditions, are accepted as most persuasive evidence of what present costs would be, while for the item of work under construction, the actual expenditures, where known, are, I think, usually adopted. Cost, while not a measure of value, is a legitimate and valuable factor in arriving at value, if it be intelligently and properly applied.

Capitalization is another material fact, whose weight depends wholly upon the surrounding circumstances. Securities recently issued for cash are entitled to and receive serious consideration. Securities issued long ago, under circumstances that may not be now ascertained with definiteness or certainty, are entitled to and in fact receive much less consideration.

The facts as to net revenue are without exception held to be material, and they are in fact material, not withstanding the interdependence between earnings and rates. What conclusively establishes their materiality is not the unanimous holding of the courts, but the fact that this holding accords with the experience of every person who has ever tried to buy or sell a public utility.

The courts through their decisions cannot make a factor material which is not in fact material, nor do they attempt to do this. What they attempt to do is simply to declare the principles which have been developed out of innumerable business transactions. The legislatures might enact that the value of an electric railway should not be affected by the weight of its rails, by the size of the copper wire, or by the character of its equipment, and every court in Christendom might decide that the value of an electric railway is not affected by these factors, but notwithstanding such enactments and such decisions, any man who wanted to either buy or sell an electric railway would find that its value was affected by these factors.

No element of value is made or can be made material or immaterial by the courts. Its effect is actually determined by the community and all that the courts have done is to declare the conclusions of the people.

The other factor specifically mentioned in *Smyth* vs. *Ames* is what is now usually called the cost of reproduction. Practice has properly recognized this as, under normal conditions, the most important single factor affecting the determination of the value of a public utility. This recognition is based upon common knowledge and experience. It is simply a concrete application of a rule confirmed by universal usage. If a prospective seller offers a public utility to a prospective buyer at a price, adopting the language of a well known and capable engineer, of X dollars, the buyer, whether he has ever heard of the reproduction theory as such or not, will involuntarily check the reasonableness of the price by asking himself what it would cost him to reproduce this property as an alternative to buying it. If one of you were to ask a real estate man here in Chicago the value of this property where you are holding this meeting, he would say to himself, in reaching his conclusion, the ground is worth about so much, it would cost to build this building about so much, its present physical condition is so and so; he would in his mind compare the construction with present construction, and he would in this way ascertain factors which would materially affect his conclusion. And very likely if you asked him whether he had applied the reproduction method, he would tell you that he had never heard of it; but, nevertheless, he would in fact have applied it roughly.

In a nutshell, the reproduction method is nothing more than a refinement and application of the rule of common experience which has taught everyone who wishes to buy something to test the reasonableness of the price by what it would cost him to obtain the same

thing either by constructing it himself or by procuring it from another source; and this factor of reproduction cost is an important factor in determining the value of a utility, for just the same reasons that what it would cost to build a like house is an important factor in determining the value of a house that may be offered for sale.

The estimated cost of reproduction should be the estimated cost of reproducing a duplicate of the going plant, not the cost of reproducing something that it is believed would be a satisfactory equivalent. What is to be ascertained is the value of the existing plant, not the value of some other plant which it is expected (but not all expectations are realized) would perform the same functions or accomplish the same results. To the extent that the hypothetical plant departs from the existing plant, there is injected an element of uncertainty which tends to impair the accuracy of the estimated cost of reproduction. In cases where the existing plant contains elements which obviously would not be incorporated in a new plant intended to perform the same service, the valuer will do just exactly what the prospective purchaser would do under like circumstances, that is, he will take these factors into account in determining the weight which the estimated cost of reproduction shall have in connection with his ultimate conclusion as to value.

The proper application of the reproduction theory calls for the exercise not only of judgment and technical training of the highest order, but of imagination as well. The value of the conclusions reached is affected not only by the accuracy of cost estimates, such as unit prices and allowances for what are usually designated as overhead items, but, underlying and to a certain extent controlling these things, by an accurate conception of just what the process of reproduction involves. It must include in connection with the hypothetical plant every step which would be involved in the reproduction of the existing plant, because each one of these steps involves the expenditure of money, and even with the greatest care in this connection it is almost certain that there will be omissions. It is not probable that the valuer will erroneously include matters which are not incidental to the reproduction of the property, but it is almost inevitable that he will be unable to anticipate everything, and that there will therefore be some omissions.

Because it is necessary to include all factors, to make the work of the valuer as accurate as possible, he must put himself in the position of a person about to reproduce the utility in question and as a preliminary matter, must attempt to reproduce in his mind every step which would be taken, from the inception of the idea to the completion of the plant in its present condition, including such attributes of the property as its business and earning power.

In making an estimate of this kind, therefore, the valuer should begin with the time when the question of the construction of the plant first suggests itself, either to the promoter or to the capitalist who is interested. Some of the steps which would naturally be taken are the following:

(a) The conception of the idea and the consideration of it.

(b) The discussion of it with other persons whom it might be necessary to interest in the project.

(c) The employment of engineers to estimate in a very rough way the amount of capital which it might be necessary to acquire.

(d) The consideration of this report and the determination whether the project seemed practicable and to promise a profit.

(e) The employment of counsel and securing his advice in a preliminary way upon franchise and organization questions.

(f) The preparation of a franchise by counsel, negotiations between counsel and the municipality with reference to the adoption of the franchise, and the time and effort which would be required to secure its adoption. No definite plans could be made, or obligations incurred, until the franchise had actually been adopted, so that the investors could know that it was one upon which it would be advisable to make a further investment.

(g) The organization of a corporation to take over the franchise and construct the plant.

(h) The preliminary survey of the territory with a view to laying out the plant, determining the location of the necessary real estate for works and things of that kind.

(i) The optioning and acquisition of the necessary real estate.

(j) The preparation of definite engineering and architects' plans which could be made the basis of definite contracts for material and construction of such parts of the work as would be contracted.

(k) The creation of a definite preliminary organization which would take charge of the doing of the actual work of construction, the securing of the necessary capital and its disbursement, and the creation of an operating organization which probably would be created gradually, contemporaneously with the work of construction.

(l) The actual work of construction.

(m) In connection with the work of construction, the building up of the business and operating force and business organization.

In connection with the consideration of these various steps, each of which is a necessary step toward the completion of the hypothetical plant, the valuer will determine the time which will probably be required for the work. In determining this, he will be governed by the point of view of the prospective purchaser, who may elect

to either buy or build. This purchaser would take the period which, all things being considered, would in his judgment be most economical.

This general outline is sufficient to make it clear that the proper application of the reproduction method involves much more than a mere listing of the physical property and the application to the quantities thus obtained of unit prices. This is an important part of the process, but it is by no means all of it, and any practice which is based upon the erroneous assumption that this listing of the physical property and application of unit prices is the entire process, must inevitably lead to conclusions grossly unfair to the utilities.

It may be profitable to refer briefly in more detail to some of the matters which are involved in an estimate of the reproduction cost of a utility. In the first place, obviously the accuracy of the estimate must depend to a considerable degree upon an accurate inventory of the property which goes to make up the utility. Such an inventory, however carefully taken, will involve more or less in the way of omissions. These will be comparatively unimportant. Something of much greater importance is the fact that the inventory of a completed property cannot, in the very nature of things, show the temporary work incident to its construction. This is very strikingly illustrated by the subway construction which is now under way in the city of New York. There, to-day, in some of the streets you will find a completed subway, with normal street and sidewalks in the first plane above it, and with an elevated railroad upon permanent supports in the plane above that, and with water mains, gas mains, and conduits in their proper places. If you had looked at this same work a few months ago, you would have found surface traffic provided for by temporary street and sidewalk surfaces, an elevated railroad in normal operation upon temporary structures, and water mains,

gas mains and conduits for the various wire services located temporarily above and below the surface, all in order to permit this subway construction.

The cost of this temporary surface for the street and of restoring the permanent surface, the cost of these temporary sidewalks and of restoring the sidewalks, the cost of the temporary elevated railroad structure and of its permanent supports, the cost of the temporary facilities for the water, gas, telephone, telegraph and lighting properties, and of providing for them permanently, were all of them, with perhaps some minor deductions, a part of the cost of this subway, and yet they are each of them items which any inventory which may be taken in the future will fail to disclose. Factors of this nature are involved in every estimate of the reproduction cost of a utility. The amount will vary with the variation in the facts which characterize each specific piece of work, but this element will always be an important element in arriving at the reproduction cost.

The date as of which the valuation should be made is a question which has furnished a subject for considerable theoretical discussion. There is an answer to the question which is as sound as it is simple. Like many other questions relating to this matter, it can be solved best by putting yourself in the position of the prospective purchaser who is invoking the estimate of the cost of reproduction to check the price, and asking what he would do. With a prospective purchaser, this is not a merely theoretical matter. It is a concrete, practical matter. The alternative that is presented to him is either the purchase of the actual property, or the construction of a like property, and the course which he will pursue is determined by the question of cost. It is perfectly clear that he cannot, having this question presented to him, put himself back three or four or five years and begin the construction then. He must construct in the

future. For this reason, the reproduction theory, properly applied, requires that the building of the hypothetical plant shall be after the date of the valuation, and not prior to that date.

As a part of the process of estimating the cost of the physical property, unit prices are usually applied to the quantities of the various units which the inventory shows would go into the construction. To illustrate, an electric railway will require a certain number of ties of various classes; it will require a number of poles of various classes; it will require a number of pounds of copper wire; it will require an ascertainable number of yards of grading; it will require a fixed number of tons of rails; it will require frogs, spikes, insulators and a very large number of other kinds of material. It is customary to ascertain the price, called the unit price, to be applied to each item of each class of material which the reproduction would involve.

There are certain other items of expense which are just as inevitably a part of the cost of the structure, which cannot be definitely ascribed to the specific items which go to make up the structure. These are illustrated by the cost of engineering, which is not usually reckoned and which it is not practicable to reckon, at so much a pole or rail or spike, but is based upon a percentage of the cost; and the interest during construction, which involves the amount of money expended and the time elapsing after its expenditure and before the property begins to earn a revenue, and which clearly must be based upon preceding items of expense. Then, again, there are contingencies, omissions, taxes, insurance, personal injuries and many other items of a like general character. These overhead items, together with the results deduced from the application of the unit costs, will give what is frequently, but not strictly accurately, called the cost of reproducing the physical property.

The unit prices and the overhead estimates are interdependent. Perhaps the best and most usual practice is to include in the unit prices all items going to the cost of the labor and material, including the wages of the foreman superintending the labor, incurred up to the time that the material is put in place in the structure. But there are wide differences in the practices of valuers upon this question, and there is undoubtedly a middle ground which includes a number of debatable items which may with propriety be classified either with the unit costs or with the overhead allowances. The essential thing is that there be the proper co-ordination of these two classes of items, so that taken together they will properly provide for each item of expense which reproduction would involve.

Unit prices, that is, taking as a concrete illustration, the price per ton of steel rails, or the price per pound of copper, are not to be determined by the market price upon the date as of which the valuation is to be made, or upon any other particular day. Here, again, it is worth while to have in mind that what the prospective purchaser is trying to ascertain is what it would cost him to reproduce this property. Its reproduction will ordinarily require a period of several years. Normal business practices negative the idea that it would be economical to buy all of the necessary material at or before the work is commenced. It would be impossible to secure all of the labor at that time. During the period of reconstruction, the prospective purchaser has every reason to believe that there will be variations in the prices of labor and material. In determining whether or not he shall buy or build, he will take this factor into account. He will consider all of the available information as to prices of both labor and material, and all of the other facts which will help him reach a conclusion as to what the probable tendency will be during the period of construction, and taking these things into account, and taking into account further the fact that, everything being considered, it is

impossible to determine positively what future prices will be, he will make estimates which in his judgment will cover insurance against this uncertainty. In other words, he should do just exactly what a contractor would do who was asked to bid upon the work and to back his judgment evidenced by his bid by his own money. This uncertainty has been paid for in the existing plant, and it is one of the factors affecting its value.

A determination of what the proper overhead charges shall be is peculiarly a matter for trained judgment. No allowance should be made for any item on account of which actual expense will not be incurred, and on the other hand, no item of necessary expense should be excluded. The accuracy with which these elements may be estimated depends very much upon the character of the work. Where there is uncertainty, it must be taken care of because this again is something which has been paid for in the completed plant.

A remarkably good illustration of an important item, properly classed as a contingency, is the situation which has developed at Panama on account of the slides in the canal. No preliminary estimate of the cost of this work could have definitely included the expense which has arisen on account of the filling in of the canal after the original excavation was completed. On the other hand, every experienced engineer knew, before the work was commenced, that it would inevitably present serious, unanticipated problems which would have to be solved before it could be completed. They could not tell what these contingencies would be, but their experience assured them that they would arise. The expense incident to the removal of this earth again and again until finally a permanent structure is completed, is a part of the cost of the canal. It must be included in the original cost; and an allowance to cover items of this kind must be made in every estimate of reproduction cost, if the estimate is to be trustworthy.

Items such as taxes, personal injuries, insurance, and the like, can in general be estimated very accurately by those who have the advantage of large experience in connection with works of the same character.

Franchises should be considered, if franchises are necessary to the operation of the utility. Not much progress has been made toward working out a basis for definitely approximating their value. It cannot be said, however, that they are not worth at least what it would cost to obtain other like franchises, nor can it be said that such other like franchises could be obtained without the expenditure of money, and the time and effort that represent money.

Going value is an element in the value of properties of this character which has been the subject of very much discussion, and as to which there is still much to be made clear. The first step towards its accurate measurement is a clear conception of what it is. My idea of it is that it is the element in the value of the property which represents the difference between its actual value and what the value of the same property would be if it were not a going concern with an established business, earning money. There has been much diversity of opinion, both in and out of the courts and commissions, as to whether or not this element of value should be taken into account. It would not be profitable, if there were time for their consideration, to take up the various arguments and pronouncements, *pro* and *con*, upon this question. It is enough to say that it seems to be absolutely clear, so clear that no argument is necessary to support the proposition, that a plant with this attribute of an established business is worth more than the mere bare bones of the same plant; and if this element of value clearly exists, it is just as clear that it must be taken into account. And it may safely be assumed that the continued discussion of this question will clarify the situation with reference to it and will lead to the general conclusion that it must be

taken into account, not because of one fine-spun theory or another, but because it is there and so ought to be taken into account.

How this element of value should be measured is another question. The Wisconsin theory, the theory based upon early losses, and the cost of reproducing this attribute of the plant, are theories which have been strongly advocated. It should be clearly borne in mind that each of these theories is intended to serve the same purpose, viz., to aid in correctly appraising this element of value. Some of these methods are fundamentally based on cost; some of them upon the cost of reproduction; some may give better results in some instances; others in others. Neither of them can be taken as an absolute measure. Each of them at its best is simply an aid to the exercise of reasonable judgment. If we are right in the proposition that a plant with this attribute is worth more than a plant without it, and this contention has the sanction of common experience everywhere, some means will be devised for giving to this element of value the weight to which it is entitled.

It is an error to think of going value as something separate and apart from the physical property. It is in fact something that cannot be separated from it, but is one of its attributes. What is being valued is a single entity, not the separate parts that go to make it up.

Without reference to the question whether in establishing a schedule of rates, the cost of reproducing the property, undiminished by depreciation, should be taken as the factor, it is clear that in ascertaining the actual value of property, such depreciation as actually exists must be taken into account. The reasons which require the consideration of appreciation likewise require the consideration of depreciation. The reproduction method applied to any property automatically takes into account appreciation and depreciation to a large extent. If it did not, the result should coincide with original cost. Variations

in the prices of labor and of material and of real estate manifest themselves in the estimate of reproduction cost. If labor is higher, if poles are higher, if ties are higher, if copper is higher or lower, if real estate and right of way are higher or lower, if the cost of buildings is higher or lower, this will manifest itself in this estimate, and properly, because these are the conditions which would confront the prospective purchaser when he was compelled to determine whether he would buy or build.

But in talking about depreciation, there should be kept clearly in mind what it means. The dictionaries define it as a lessening in value. Obviously, a lessening in value may not be ignored in an effort to ascertain value. But obviously, also, where, as in all of these cases, the effort is to ascertain the value of a single entity as a going concern, the mere fact that all parts of it are not new—the mere fact that through the maintenance and reserve accounts provision must be made for continuous renewals—is not enough to warrant the inference that there has been any lessening in the value of the property in question. On the other hand, it is a matter of common knowledge that no new railroad, whether it be an electric railroad or a steam railroad, whether it be a street railway or an interurban railway, is worth as much as the same railroad after it has been seasoned by time and use. It is not an exaggeration to say that any public utility, well and efficiently maintained and operated, is perhaps without exception not only worth as much, but worth more than an absolutely new like plant.

Another thing that should be given strong emphasis is the fundamental error in the assumption that the amount which may be at any time in the depreciation reserve measures the actual depreciation of the property. There is absolutely no warrant for such an assumption. If a prosperous property has piled up a reserve equal to one hundred per cent., this certainly does not mean that the entire value of the property has been destroyed;

and on the other hand, the fact that a property has no reserve is not a demonstration that it has not depreciated. Unless this be true, depreciation would not be what it is, a fact, but would be a mere matter of accounting and it would be easy to prevent it by carrying no reserves upon the books. Whether or not property has depreciated is not a question of age and life, or of theories and mortality tables. It is a question of fact, not determined or ascertainable either from age or life or mortality tables, but only ascertainable through an actual inspection of the property by some one whose training and experience has qualified him to draw sound conclusions.

The valuer, with his factors of cost, capitalization, revenue and reproduction cost, has not all of the factors which he should take into account. It is difficult to imagine any public utility, reasonably well engineered, located in a community sufficiently developed to need such a utility, as worth less than it would cost to reproduce it. If the existing utility were destroyed, a substitute would have to be provided. It could not be said that this substitute would be worth less than its cost, and its cost would be equivalent to the cost of the reproduction of the existing utility. But there are other factors which the estimator must take into account. Important among these are the financial history of the plant, the probable development of the community in which the plant is located, whether the plant is thoroughly well engineered with reference to both the present and the future, as well as many other facts and circumstances which will vary with the variations of the conditions which surround specific utilities.

From the consideration of every material fact, in the light of reasonable judgment, the ultimate fact of value may be deduced. The accuracy of the deduction will depend upon the accuracy with which the material facts are ascertained, and the soundness of the judgment applied to them.

Honorable C. A. Prouty, director of the division of valuation of the Interstate Commerce Commission, having reinforced his conclusion by some illustrations, said:—*

> "Illustrations like those two might be indefinitely multiplied, but these are sufficient to exhibit the thought I wish to emphasize: namely, that this valuation of our railways is not a mere engineering problem, involving the cost of reproduction or the amount of depreciation alone. Indeed, it is not properly an engineering problem at all but rather a social and economic problem; a legal problem; in its final analysis a political problem. It is for the Commission first of all to ascertain all these facts and from them to deduce what in its opinion is the fair value of these properties."

There can be no question about the soundness of this statement. It has been a mistake to assume that the problem of valuation should be worked out by the engineers and that the results of their work should be presented by them with only nominal participation by others. It is the function of the lawyers to determine the fundamental questions as to what evidence is competent upon the question of value which in effect fix the scope of the entire investigation. The engineering data constitute but one material factor. It is the lawyers who are by training and experience best fitted to direct the presentation of all the evidence with a view to the establishment of the ultimate fact of value. Criticism of the engineers would be unjust. Such criticism as is justifiable should be directed at the lawyers. The engineers, through lack of co-operation on the part of the legal fraternity, have been frequently compelled to attempt to carry the burden of both. The best results, and by best results is meant the most accurate results, cannot be attained without the cordial co-operation of the

* Speech delivered before the second annual meeting of the Chamber of Commerce of the United States, Washington, February 11-13, 1914.

engineers, the accountants, the executives and the lawyers.

When Value Has Been Ascertained, What Use Should Be Made Of It.

It is as important to clearly apprehend the use to be made of the fact of value as it is to understand what it is, and how it may be most closely determined.

The use of value in connection with the regulation of capitalization is obvious. It, however, is not the only factor which should be taken into account in determining the amount of securities which may properly be issued. This, like every other question presented to a regulatory body, should be determined along broad business and economic lines.

It is a mistake to assume that, value having been fixed, and fair return having been fixed by the determination of a rate simply high enough to avoid the charge of confiscation, what should be the net proceeds from a reasonable rate schedule can be ascertained by multiplying these two factors together. This neither accords with the law nor with sound business sense and policy. Instead of determining what would be a reasonable schedule of rates, this process simply fixes the line which limits the jurisdiction of the regulating body, below which it cannot go. It, speaking broadly, represents the costs of the service. There is another factor that is of just as much importance in determining what is a reasonable rate, which is the value of the service to the consumer. Between the cost as a minimum and the value as a maximum, lies the field for regulation. To my mind, the matter has never been more aptly put than by Justice Swayze*, from whose opinion the following excerpt is made:—

*Public Service Gas Company *vs.* Board of Public Utility Commissioners, *et al.*, Supreme Court of New Jersey, decided July, 1913.

> "The next question is whether the rate fixed was just and reasonable. On the one hand a just and reasonable rate can never exceed, perhaps can rarely equal, the value of the service to the consumer. On the other hand it can never be made by compulsion of public authority so low as to amount to confiscation. A just and reasonable rate must ordinarily fall somewhere between these two extremes, so as to allow both sides to profit by the conduct of the business and the improvements of methods and increase of efficiency. Justice to the consumer, ordinarily, would require a rate somewhat less than the full value of the service to him; and justice to the company would, ordinarily, require a rate above the point at which it would become confiscatory."

In the determination of this question between these two extremes, the regulatory body should consider what any business man would consider if a like question were presented to him. Some of the factors which would normally and naturally be taken into account are the value of the property, the cost of reproducing it new, the cost of rendering the service, the value of the service to the consumer, the financial history of the property and whether its profits have been large or small. Much of the difficulty that has arisen in connection with these matters has been due to the misapprehension that value when ascertained should exclude from consideration many of these other material factors.

The valuation of any public utility, whether it be made by the utility or by a regulatory body, should be treated as a broad question to be determined justly and fairly, not to be controlled by mere theories and technicalities except in so far as their use will tend to an equitable and just conclusion. Treating the subject in this manner will aid in making regulation of value to both the utilities and the public—will help to make it worth what it costs. Approaching the subject in any other way will militate against the success of all regulation.

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